



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,900	10/21/2003	Jerome Daviot	60937-0172-US	3765

9629 7590 11/23/2005
MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

AHMED, SHAMIM

ART UNIT	PAPER NUMBER
----------	--------------

1765

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,900

Applicant(s)

DAVIOT ET AL.

Examiner

Shamim Ahmed

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/12/05 have been fully considered but they are not persuasive. Applicants argue that there is no motivation to combine the teaching of Gogg et al into Leon et al because Leon expressly teach that the components in the cleaning composition is admixed in such to provide preferred pH of about 2-9 or 2-6.

In response, examiner states that the argument is not persuasive because as the process continue the pH of the composition varies and one of ordinary skilled in the art would have been motivated to adjust the pH within the range by using Gogg et al's teaching.

Applicants argue that claim 18 should not be rejected by Leon et al.

In response, examiner states that excluding or including any components from a composition would have been obvious to one skilled in the art (see page 4 of the previous office action).

As to Herdt reference, applicants argue that the reference is non-analogous art.

In response, examiner states that the argument is not persuasive because the claims are directed to a composition not a process of using the composition and Herdt's composition is capable of cleaning semiconductor substrate as an intended use of the claimed composition.

In reference to Skee '370 patent, applicants argue that surfactant will materially affecting the composition.

Art Unit: 1765

In response, examiner states that surfactant would not have any adverse effect because surfactant always advantageous in cleaning composition such as wetting agent and furthermore, consisting essentially of is not a closed language, which does not exclude to add others that are beneficial.

2. In the following rejections, the limitation under the heading or "optionally" is not given patentable weight because they are optional to be present in the composition.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR.1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-13, 17-23 and 24 -28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leon et al (6,030,932) in view of Gogg et al (6,686,297).

Leon et al disclose a cleaning composition comprises water, alkaline compound such as hydroxylamine or quaternary ammonium hydroxide, a fluorine-containing compound such as ammonium bi fluoride (col.4, lines 31-59 and col.5, lines 25-27).

Leon et al also teach that controlling of pH in the range of 2-9 is critical (col.5, lines 13-21 and col.6, lines 30-35).

Leon et al fail to disclose that the composition comprises phosphoric acid.

However, in a cleaning composition, Gogg et al teach that additives such as phosphoric acid can be added for adjusting pH to a desired value of the cleaning liquid and thereby increasing the effectiveness of the cleaning or treatment liquid (col.3, lines 51-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of claimed invention to modify Leon et al with Gogg et al by introducing phosphoric acid in order to efficiently controlling or adjusting the pH of the cleaning composition for increasing the effectiveness of the cleaning composition as taught by Gogg et al.

As to claim 2, Leon et al teach that the pH of the composition is maintained in the range of 2-6 (col.5, lines 13-21).

As to claims 7-9, Leon et al teach that the cleaning composition also includes other acid compounds such as lactic acid as corrosion inhibitor, wherein the corrosion inhibitor content is in minor amount (col.6, lines 5-11).

As to claims 10-11, Leon et al teach that the composition also comprises fluoride-containing compound such as ammonium bi fluoride of about 0.5 to 10% by weight (col.4, lines 50-59).

As to claims 17-23, it would have been obvious choice to one of ordinary skilled in the art that the cleaning composition will include or exclude the claimed constituents depending on the types of residue to be cleaned.

As to claims 24, 25, 27, Leon et al teach that the concentration of hydroxylamine is in the range of 0.1% to 10% (col.5, lines 45-48) and the composition may include a quaternary ammonium hydroxide (col.6, lines 13-18).

Leon et al fail to disclose the exact concentration of the claimed compounds but it would have been obvious to optimize as the optimization of a result effective variable involves only routine skill in the art.

6. Claims 1-5, 7-8, 14 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herdt (6,121,219).

Herdt disclose an aqueous cleaning composition comprises a mine or a quaternary ammonium compound, phosphoric acid, or in combination of organic acid of citric acid, surfactant and organic solvent with a pH ranging 1-5 (col.2, lines 35-55, col.3, lines 7-36, col.7, lines 21-31 and col.7, line 63-col.8, line 10).

7. Claims 1, 14-16, 24-25 and 30-31 rejected under 35 U.S.C. 103(a) as being unpatentable over Skee (6,599,370).

Skee discloses a composition for cleaning microelectronic substrate, wherein the composition comprises water, suitable bases such as a quaternary ammonium hydroxide or organic amines (alkanoamines), surfactants (col.9, lines 17-25), organic

Art Unit: 1765

solvent (col.9, lines 1-15) and phosphoric acid (col.6, lines 26-28, lines 41-col.7, lines 20 and lines 34-40).

Skee also discloses that phosphoric acid is in the range of 0.1-about 3.0% by weight in combination of a quarternary ammonium hydroxide such as tetramethyl ammonium hydroxide (TMAH) (col.10, lines 5-10).

8. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skee (6,465,403).

Skee discloses a composition for cleaning microelectronic substrate, wherein the composition comprises water, suitable bases such as a quarternary ammonium hydroxide or organic amines (alkanoamines), surfactants (col.6, lines 29-col.7, lines 65) and phosphoric acid and furthermore, oxalic acid dehydrate may be added to the composition (col.48, lines 15-24).

9. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulhoff et al (6,309,470).

Schulhoff et al teach a surface cleaning composition having phosphoric acid, glycolic acid and water (col.2, lines 28-52).

Schulhoff et al fail to disclose the exact concentration of the claimed compounds but it would have been obvious to optimize as the optimization of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arvanitidou et al (6,475,967) teach a cleaning composition with 0.5-5% of glycolic acid and water.
11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shamim Ahmed
Primary Examiner
Art Unit 1765

SA
November 20, 2005